University of California
College of Agriculture
Agricultural Experiment Station
Berkeley, California

SEASONAL LABOR NEEDS FOR CALIFORNIA CROPS

Monterey County

Progress Report No. 27

by

R. L. Adams

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Monterey County

Scope of Presentation.-- The following considerations govern the presentation of this progress report:

1. The data are confined to the area indicated above.

2. The data are confined solely to crops, livestock needs being ignored.

3. The findings apply only to occasional or seasonal labor requirements as distinguished from labor contributed by farm operators and by workers employed on a year-round or regular basis of employment.

4. Attention is concentrated upon workers required for hand tasks -- planting, thinning, weeding, hoeing, and harvesting -- without including teamsters, tractor drivers, irrigators, hay balers, threshermen, and shed packers of vegetables or fruits.

5. The presentation includes the so-called migratory, transient, or roving workers which comprise an important source of help needed in connection with certain tasks and at "peak" times which seasonally arise in connection with many field, truck, and fruit crops commercially produced in California.

6. This report is confined to California's need for seasonal agricultural workers because of the more pressing problems liable to arise in connection therewith. A later study is planned which will deal with other kinds of labor involved in the production of California's many crops.

Brief Description of the Area.-- Monterey County is one of the coast counties of California, bordering the Pacific Ocean on the west about 75 miles southeast of San Francisco. On the east it joins San Benito, Fresno, and Kings counties along the crests of the Gabilan Mountains, a range of moderate height. On the north it is bounded by Santa Cruz and San Benito counties; and on the south by San Luis Obispo County. Between the Santa Lucia Mountains, which parallel the western shore line, and the Gabilan range on the east, lies the Salinas Valley, several miles in width, along which the Salinas River runs northwestward through the central portion of the county for its whole length of about 90 miles.

The main farming district lies along the Salinas River, from Salinas and Castroville on the north to San Lucas on the south. Between these are the towns of Chualar, Gonzales, Soledad, Greenville, and King City. Smaller farming districts are located in the Carmel Valley, about one-half mile wide and 10 or 15 miles long, in the northwestern part of the county, and in the Lockwood and Peach Tree valleys in the southern part; also in a portion of the Pajaro Valley on the northern boundary adjoining Santa Cruz County.

The county contains a total of 2,131,000 acres, of which 355,245 acres are classed as available for crops by the 1935 Census. This is further classified as follows by the Census for the crop year 1934:

	Acreage
Crop land harvested	198,397
Crop failure	21,053
Crop land idle or fallow	48,148
Plowable pasture	87,647
Total land available for crops	355,245

Crop acreages in 1935 are estimated to have been about as follows:

	Acreage
Field crops	167,519
Vegetable crops	63,705
Fruit and nut crops	10,541
Total	241,765

The farming lands of the Salinas Valley are mostly below 250 feet in elevation, although less intensively cultivated crops, such as hay and grain are raised on the higher sloping or rolling land along each side of the valley, and in some of the tributary valleys to an elevation of 750 feet or more. The Carmel Valley lies mostly below the 300-foot contour. The Lockwood Valley has an elevation of about 1,000 feet, and is used mostly for wheat growing.

Many different soils are represented in the county. The lower and most intensively farmed land, which lies along the Salinas River is generally of a heavier texture than the higher land on either side of it, and is mostly silty clay loam and clay, with smaller areas of fine sand and fine sandy loam at various places close to the river. The higher land of the Salinas Valley is of six or seven different soil series, and ranges from sand to clay in texture, the greater portion being of the lighter textures -- sandy loam and fine sandy loam. The Carmel Valley is mostly fine sand, with some areas of sand and sandy loam. The rolling land of the Elkhorn district is mostly sandy loam and loamy sand, of two or three different series. The soils of that portion of the Pajaro Valley lying in Monterey County are mostly loam in texture, but include some fine sandy loam, silty clay, and a considerable acreage of clay loam adobe.

Crops, Acreage, and Production.-- The basis used in calculating occasional or seasonal need for labor, in addition to that furnished by farm operators and regularly employed workers, appears as table 1.

Acreage figures in table 1, except where noted, are from the "Summary of Major Crops of Monterey County for 1935." from the County Agricultural Commissioner. Owing to lack of assembled data, the figures on production are from various sources, and in many cases are estimates based on average yields per acre. While not accurate in all details, they are believed to represent conditions with a fair degree of accuracy.

TABLE 1

Basis for Calculating Seasonal Labor Requirements

Monterey County

Crop	Acreage	Production
Field crops:		
Alfalfa*	15,915	72,972 tons
Beans	45,000 †	592,000 cwt.
Garlic	525	34,125 cwt.
Grain		
Barley	40,000	480,000 cwt.
Wheat	27,000	216,000 cwt.
Guayule	1,357 ‡	
Hay, other than alfalfa	15,000	22,500 tons
Onions	250	25,000 sacks of 100 pounds
Potatoes (early -- 500)	1,000	62,500 lugs early potatoes
(late -- 500)		37,500 cwt. late potatoes
Seed crops §		
Seed beans	3,700 ¶	59,200 cwt.
Seed peas	4,542 ¶	63,500 cwt.
Seed nasturtiums	100	
Seed radishes	150	
Seed sweet peas	250	
Sugar beets	14,087	178,417 tons
Vegetable crops:		
Artichokes*	3,800	--
Cabbages *	150	--
Carrots (spring -- 2,267)	4,349 ‖	1,087,250 packed crates
(fall -- 2,082)		
Cauliflower	2,400 ‖	600,000 packed crates
Lettuce (spring -- 22,353)		
(fall -- 22,871)	45,215 ‖ **	6,782,250 packed crates
Peas, green (spring -- 3,000)		
(fall -- 2,100)	5,100	325,000 hampers of 30 pounds
Peas, canning	650	--
Spinach, table *	100	
canning	567	2,268 tons
Tomatoes, table	700	122,500 packed lugs
canning	674	2,696 tons
Fruit and nut crops: ††		
Almonds	3,170.9	317 tons
Apples	2,138	800,000 boxes
Apricots	1,665.8	4,165 tons (fresh weight)
Cherries*	74.4	--
Grapes*	163.6	--
Pears (mostly not Bartletts)	963.8	2,410 tons
Peaches*	109	--
Strawberries	250 ‡‡	262,500 crates (of 12 baskets)
Walnuts	234	165 tons

* Need for seasonal labor inconsequential and hence ignored.

† Bean acreage estimated as 20,000 acres dry farmed, balance irrigated.

‡ Unharvested acreage -- spring, 1935 -- 2,385 acres were harvested in Monterey County in the "Campaign" from August, 1934 to May, 1935.

(Footnotes continued on next page.)

ϕ Acreages of a few minor crops such as broccoli, mustard, parsley, and miscellaneous flower seeds ignored.

¶ Data from four major seed companies for 1935 season.

|| Acreage data from Grower-Shipper Vegetable Association of Central California.

** Figure includes one-third of the acreage of the Watsonville District, estimated to be in Monterey County.

†† Figures from W.P.A. Fruit Acreage Survey of 1936.

‡‡ Strawberry acreage estimated by Central California Berry Growers Association and represents bearing acreage only.

Operations Requiring Seasonal Labor and Time of Need.-- Farm operations requiring the use of seasonal or occasional labor for the various crops raised in Monterey County are indicated in table 2. This tabulation does not include the employing of shed workers needed to wash, pack and prepare various commodities for shipping and marketing.

TABLE 2

Operations Requiring Use of Seasonal Labor and Times of Needs by Crops

Monterey County

Crop	Operation	Time of need
Field crops:		
Beans, dry farmed (Estimated at 20,000 acres)	Hoeing (80 per cent by seasonal workers)	May, June, July (one-third each month)
	Turning ends of windrows (33 per cent by seasonal workers)	August (one-half of acreage) Sept. (one-half of acreage)
	Threshing (with "pick up" harvester) (25 per cent by seasonal workers)	Aug. 20-31 (25 per cent of acreage) Sept. 1-30 (75 per cent of acreage)
Beans, irrigated (Estimated at 28,700 acres, including seed beans)	Hoeing (100 per cent by seasonal workers)	May, June, July, August (25 per cent each month)
	Irrigating (33 per cent by seasonal workers)	May (20 per cent of job) June (30 per cent of job) July (30 per cent of job) Aug. (30 per cent of job)
	Raking (30 per cent by seasonal workers)	Aug. 15-31 (25 per cent of acreage) Sept. 1-30 (75 per cent of acreage)

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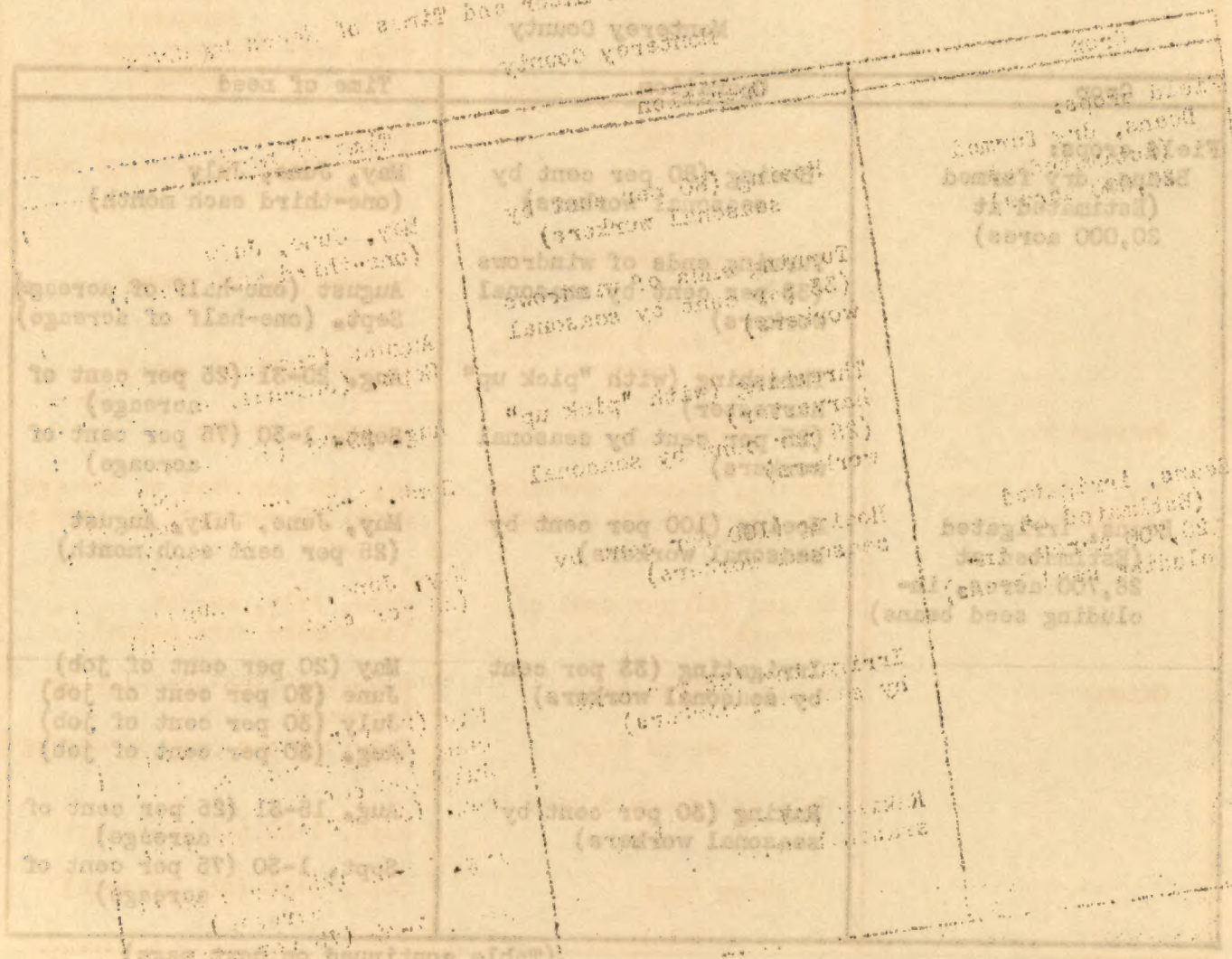

Table 2 continued.

Crop	Operation	Time of need
Field crops:		
Beans, irrigated (continued)	Turning ends of windrows, etc. (50 per cent by seasonal workers)	Aug. (25 per cent of agreage) Sept. (75 per cent of acreage)
	Threshing (with pick up harvester) (25 per cent by seasonal workers)	Sept. (80 per cent of acreage) Oct. (20 per cent of acreage)
Grain, (barley, wheat and oats)	Pulling radish on one-third of barley acreage	March (50 per cent of job) April (50 per cent of job)
	Harvesting by combine (33 per cent by seasonal workers)	June 10-30 (20 per cent of acreage) July 1-31 (70 per cent of acreage) Aug. 1-10 (10 per cent of acreage)
Garlic	Planting in field	Nov. 15-30 (10 per cent of acreage) Dec. 1-31 (80 per cent of acreage) Jan. 1-15 (10 per cent of acreage)
	Hoeing (twice)	February, March, April (two-thirds of acreage each month)
	Pulling and throwing in piles	August (all of crop)
	Clip off roots and tops, and put in sacks	August (all of crop)
Guayule *	Harvesting	August 1 to May
Hay, other than alfalfa	Mowing, raking, shocking (50 per cent by seasonal workers)	May (80 per cent of acreage) June (20 per cent of acreage)
	Baling (50 per cent of tonnage)	June, July, August (one-third each month)
Onions	Hoeing, first time	February (100 per cent of (acreage)
	second time	May (100 per cent of acreage)
	Pull and throw 3 beds in 1	Sept. 1-20 (all acreage)
	Clipping tops	Sept. 1-30 (all of crop)

(Table continued on next page)

Table 2 continued.

Crop	Operation	Time of need
Field crops: Onions (continued)	Sorting and sacking	Sept. 1-30 (all of crop)
Potatoes (early)	Picking up and boxing	Apr. 15-30 (10 per cent of crop) May 1-31 (70 per cent of crop) June 1-15 (20 per cent of crop)
Potatoes (late)	Hoeing	May, June, July (two-thirds of acreage each month)
	Picking up and sacking or piling	September, October, November (one-third of crop each month)
Seed Peas	Hoeing	Feb. (40 per cent of acreage) Mar. (40 per cent of acreage) Apr. (20 per cent of acreage)
	Piling and turning ends of windrows, etc. (50 per cent by seasonal workers)	May (all of acreage)
	Threshing (by pick-up harvester) (33 per cent by seasonal workers)	June (all of acreage)
Seed Beans	(Operations same as field beans and therefore included with field beans.)	
Seed, Nasturtium	Hoeing	May (all acreage) June (all acreage)
	Cutting by hand and putting on sheets	Aug. 15-31 (one-third of acreage)
	Threshing and screening--twice	Sept. (two-thirds of acreage)
Seed, Radish	Thinning	Jan. (all acreage)
	Hoeing	February (all acreage)
	Hand cutting and piling	August (all acreage)
	Threshing	September (all acreage)
Seed, Sweet peas	Hoeing	February, March (50 per cent of acreage)
	Cutting and piling by hand	July (all acreage)
	Threshing	July (all acreage)

(Table continued on next page.)

Table 2 continued.

Crop	Operation	Time of need
Field crops:		
Sugar beets	Thinning	February (1,900 acres) March (5,000 acres) April (5,000 acres) May (1,700 acres) June (400 acres) July (35 acres)
	Hoeing	March (1,900 acres) April (5,000 acres) May (5,000 acres) June (1,700 acres) July (400 acres)
	Irrigating (average 2 times), (80 per cent by seasonal workers)	April, May, June (two-thirds of acreage each month)
	Topping and loading	July (800 acres = 10,133 tons) Aug. (4,000 acres = 50,666 tons) Sept. (4,287 acres = 54,302 tons) Oct. (5,000 acres = 63,333 tons)
Vegetable crops:		
Artichokes †		
Carrots	Weeding	January (0 per cent of acreage) February (3 per cent of acreage) March (7 per cent of acreage) April (13 per cent of acreage) May (10 per cent of acreage) June (7 per cent of acreage) July (6 per cent of acreage) August (8 per cent of acreage) September (12 per cent of acreage) October (10 per cent of acreage) November (10 per cent of acreage) December (12 per cent of acreage)
	Hoeing	January (12 per cent of acreage) February (0 per cent of acreage) March (3 per cent of acreage) April (7 per cent of acreage) May (13 per cent of acreage) June (10 per cent of acreage) July (7 per cent of acreage) August (6 per cent of acreage) Sept. (8 per cent of acreage) October (12 per cent of acreage) November (10 per cent of acreage) December (10 per cent of acreage)
	Irrigating (two times)	March (10 per cent of acreage) April (20 per cent of acreage) May (23 per cent of acreage)

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Table 2 continued.

Crop	Operation	Time of need
Vegetable crops: (Carrots (continued)	Irrigating (two times) (continued)	June (17 per cent of acreage) July (13 per cent of acreage) Aug. (14 per cent of acreage) Sept. (20 per cent of acreage) Oct. (22 per cent of acreage) Nov. (22 per cent of acreage)
	Pulling and tying in bunches	Jan. (10 per cent of crop) Feb. (12 per cent of crop) Mar. (2 per cent of crop) Apr. (3 per cent of crop) May (7 per cent of crop) June (13 per cent of crop) July (10 per cent of crop) Aug. (7 per cent of crop) Sept. (6 per cent of crop) Oct. (8 per cent of crop) Nov. (12 per cent of crop) Dec. (10 per cent of crop)
Cauliflower	Planting	July, August, September (one-third of acreage each month)
	Hoeing (twice) (50 per cent by seasonal workers)	Sept., Oct., Nov., Dec. (one-half of acreage each month)
	Cutting, hauling, and packing	Nov. (.4 per cent of crop) Dec. (7.2 per cent of crop) Jan. (27.1 per cent of crop) Feb. (36.6 per cent of crop) Mar. (22.9 per cent of crop) Apr. (4.2 per cent of crop) May (1.2 per cent of crop)
	Irrigating (50 per cent by seasonal workers)	July (1,200 acres) Aug. (2,400 acres) Sept. (2,400 acres) Oct. (2,400 acres) Nov. (2,400 acres)
Lettuce	Thinning	Feb. (9 per cent of acreage) Mar. (15 per cent of acreage) Apr. (8 per cent of acreage) May (11 per cent of acreage) June (14 per cent of acreage) July (12 per cent of acreage) Aug. (13 per cent of acreage) Sept. (14 per cent of acreage) Oct. (2 per cent of acreage)
	Hoeing	March (9 per cent of acreage) Apr. (15 per cent of acreage) May (8 per cent of acreage)

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Table 2 continued.

Crop	Operation	Time of need
Vegetable crops:		
Lettuce (continued)	Hoeing (continued)	June (11 per cent of acreage) July (14 per cent of acreage) Aug. (12 per cent of acreage) Sept. (13 per cent of acreage) Oct. (14 per cent of acreage) Nov. (2 per cent of acreage)
	Irrigating (66 per cent by seasonal workers)	Feb. (9 per cent of acreage) Mar. (22 per cent of acreage) Apr. (23 per cent of acreage) May (19 per cent of acreage) June (25 per cent of acreage) July (26 per cent of acreage) Aug. (25 per cent of acreage) Sept. (27 per cent of acreage) Oct. (26 per cent of acreage) Nov. (2 per cent of acreage)
	Cutting	Mar. (8,000 crates) Apr. (9 per cent of crop) May (15 per cent of crop) June (8 per cent of crop) July (11 per cent of crop) Aug. (14 per cent of crop) Sept. (12 per cent of crop) Oct. (13 per cent of crop) Nov. (14 per cent of crop) Dec. (2 per cent of crop)
Peas, market	Turn rows (on Fall crop)	Sept. (all Fall acreage)
	Hoeing	March, April, May (one-third of Spring acreage each month) Sept. (all Fall acreage)
	Picking	Apr. (1 per cent of crop) May (60 per cent of crop) June (17 per cent of crop) Sept. (3 per cent of crop) Oct. (16 per cent of crop) Nov. (3 per cent of crop)
Peas, canning	Harvesting with vines (75 per cent by seasonal workers)	May (75 per cent of acreage) June (25 per cent of acreage)
Spinach	Hoeing (twice)	Jan. (all acreage) Feb. (all acreage)
	Picking up and crating	March (all of crop)
Tomatoes	Transplanting in beds	March (all plants)
	Setting plants in field	Apr. 15-30 (50 per cent of acreage) May 1-31 (50 per cent of acreage)

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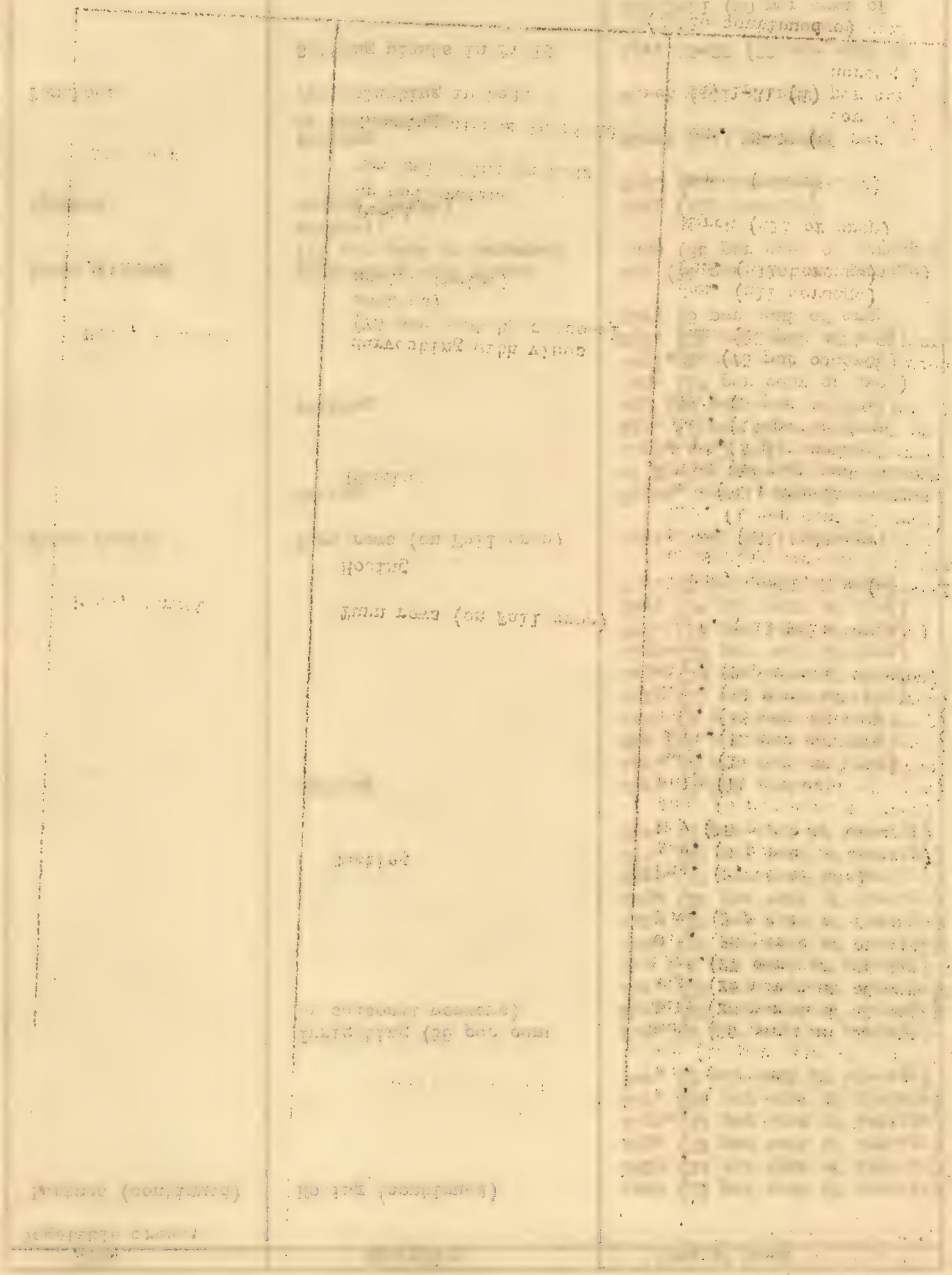

Table 2 continued.

Crop	Operation	Time of need
Vegetable crops: Tomatoes (continued)	Replanting misses	May (75 per cent of job) June (25 per cent of job)
	Hoeing	May, June, July (one-third of acreage each month)
	Picking for shipping	Sept. (3 per cent of crop) Oct. (88 per cent of crop) Nov. (9 per cent of crop)
	Picking for canning	Aug. 20-31 (10 per cent of crop) Sept. 1-30 (40 per cent of crop) Oct. 1-31 (50 per cent of crop)
Orchard crops: Almonds	Knocking	Aug. 15-31 (20 per cent of crop) Sept. 1-30 (40 per cent of crop) Oct. 1-31 (30 per cent of crop) Nov. (10 per cent of crop)
Apples	Pruning	December, January (one-third of acreage each month) February, March (one-sixth of acreage each month)
	Spraying (50 per cent by seasonal workers)	February, March (one-half of acreage each month) April (all acreage) May, June, July (two-thirds of acreage each month)
	Thinning (75 per cent of acreage)	May (25 per cent of acreage) June (50 per cent of acreage)
	Picking	Aug. (15 per cent of crop) Sept. (40 per cent of crop) Oct. (40 per cent of crop) Nov. (5 per cent of crop)
Apricots	Pruning (50 per cent by seasonal workers	Oct. 15-31 (20 per cent of acreage). Nov. (40 per cent of acreage) Dec. (40 per cent of acreage)
	Thinning	Apr. 15-30 (50 per cent of job) May 1-15 (50 per cent of job)

(Table continued on next page)

Table 2 continued.

Crop	Operation	Time of need
Orchard crops: Apricots (continued)	Picking	June 15-30 (10 per cent of crop) July 1-31 (80 per cent of crop) August 1-17 (10 per cent of crop)
	Cutting for drying (90 per cent of crop)	June (10 per cent of job) July (80 per cent of job) August (10 per cent of job)
	All other dry yard work	June 15-30 (10 per cent of job) July 1-31 (80 per cent of job) August 1-7 (10 per cent of job)
Pears	Pruning (50 per cent by seasonal workers)	November (20 per cent of acreage) December (30 per cent of acreage) January (30 per cent of acreage) February (20 per cent of acreage)
	Spraying (50 per cent by seasonal workers)	February, March (one-half of acreage each month) April (all acreage) May, June, July (two-thirds of acreage each month)
	Picking, other than Bartletts (90 per cent by seasonal workers)	September 1-30 (75 per cent of crop) October 1-15 (25 per cent of crop)
Strawberries ‡	Picking, (50 per cent by seasonal workers) (25 per cent by seasonal workers)	May (30 per cent of crop) June (20 per cent of crop) July (20 per cent of crop) August (10 per cent of crop) Balance scattering, and picked by regular employees or operators.
Walnuts	Knocking, hulling and sacking	October

* Guayule harvesting requires about 3 man-days per acre, of which about 50 per cent is done by seasonal workers. From January to May, 1935, there were from 21 to 78 seasonal workers used on this crop, with a peak of 78 in February. From 40 to 50 were employed in the Fall of 1934.

† Very little seasonal labor is used on artichokes. Occasionally a few workers are needed for harvesting during warm weather, usually in October or March, or for setting new plants in April.

‡ On strawberry picking, seasonal labor is needed only on the two-year old plantings, or about 40 per cent of the total acreage. During May and June, one extra worker per acre is needed; and in July and August, about one extra for each 1½ to 2 acres. Usually two persons are regularly employed throughout the year on each 2½ acres of strawberries.

Table 2 (continued)

Crop	Operation	Period
[illegible] Apples (continued)	Thinning [illegible] (50 per cent by [illegible])	June [illegible] (50 per cent of [illegible]) [illegible] August [illegible] (per cent of [illegible])
	All other crop work [illegible]	June [illegible] (15 per cent [illegible]) July 1-31 (30 per cent [illegible]) August 1-7 (20 per cent of [illegible])
Pears	[illegible] Pruning (50 per cent by seasonal workers)	November [illegible] (20 per cent [illegible]) December [illegible] January [illegible] February [illegible]
Peaches	[illegible] Spraying (50 per cent by seasonal workers)	[illegible] March [illegible] April [illegible] May, June [illegible]
	[illegible] Picking, other than Bartlette (80 per cent by seasonal workers)	[illegible] September [illegible] October 1-15 [illegible]
Strawberries †	[illegible] Picking (90 per cent by seasonal workers) [illegible] (per cent by seasonal workers)	[illegible] May [illegible] June [illegible] July [illegible] August [illegible]
Blackberries †	Picking (90 per cent by seasonal workers) [illegible]	[illegible] July [illegible] August [illegible] [illegible] (per cent of [illegible])
Walnuts	Knocking, hulling and sacking	[illegible] October [illegible]

[illegible]

* [illegible] picking, requiring about 3 months [illegible] [illegible] Peak [illegible] [illegible]

* [illegible] seasonal labor and peak [illegible]

† [illegible] [illegible]

Findings of Seasonal Labor Needs.-- Details and summaries of seasonal labor requirements of Monterey County agriculture are presented as table 3. The "size of task" are figures drawn from table 1 in terms of either acreage or output in tons, crates, boxes, or whatever unit is commonly used. The "output per man-day" is an average figure for the entire acreage or output figured in packed crates, hampers, or boxes (in case of fruits and vegetables). If the work is of a nature that requires a crew, different members of which perform different tasks (such as cutting, trimming, loading, and hauling cauliflower; trimming and crating celery, etc.), then the average shown is per man based on the entire crew. Length of day is 9 hours, November to February; 10 hours, March to October, unless otherwise stated. Wide variations in output occur between farm and farm, field and field, and season and season, because of differences in soil types, climatic conditions, weeds, yields, and other factors influencing the amount of work that a laborer can perform in a given day. Moreover, the basis of output is a mature, experienced male worker, without reference to use of women, children, and more or less inexperienced help that is sometimes used in connection with certain of the tasks requiring use of seasonal workers. The column headed "available days" reflects (a) limitations set from the period within which the work must be performed because of the nature of the task, such as transplanting, thinning, weeding, and cutting, and (b) available days as determined by weather conditions, inclement weather reducing the number of days when a required task can be performed. The "required number of individuals" is given in terms of workers as noted above in connection with "output per man-day."

It is probable that the estimated number of workers required as recorded in table 3, will often be lower than the actual requirements, for the reason that "peaks" frequently occur, during which an unusually large proportion of the job is done in a very short period. This would naturally require a much greater number of workers than when the work is spread over a longer period, although the total amount of labor (in man-days) remains the same. Also, no allowance has been made for lost time, from sickness or other causes, part-time workers, or other factors which would tend to increase the number of individuals needed.

TABLE 3

Seasonal Labor Needs -- Monterey County -- by Months and Tasks

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers *
January	Garlic: planting	53 acres	0.16 acre	818	9	36 (from 1st to 15th)
	Seed radish: thinning	150 acres	1.5 acres	100	10	10 (for 10 days)
	Carrots: hoeing	522 acres	1 acre	522	19	28
	pulling and tying in bunches	108,725 crates	12 packed crates (in 8 hours)	9,060 (of 8 hrs.)	19	477
	Cauliflower: cutting	162,600 crates	48 crates (in 8 hrs.)	3,387 (of 8 hrs.)	19	178
	packing	162,600 crates	40 crates (in 8 hrs.)	4,065 (of 8 hrs.)	19	214
	Spinach: hoeing	567 acres	0.66 acre	860	19	46
	Apples: pruning	713 acres	0.2 acre	3,565	19	188
	Pears: pruning	145 acres †	0.17 acres	870	19	46
	Totals			22,747	19	1,197 man-months
February	Garlic: hoeing first time	350 acres	0.5 acre	700	23	31
	Onions: hoeing first time	250 acres	0.5 acre	500	23	22
	Seed peas: hoeing	1,820 acres	1 acre	1,820	23	79
	Seed radish: hoeing	150 acres	1.75 acre	86	23	4
	Seed sweet peas: hoeing and weeding	125 acres	1 acre	125	23	6
	Sugar beets: thinning	1,900 acres	0.4 acre	4,750	23	207
	Carrots: weeding	130 acres	0.25 acre	520	23	23
	pulling and tying in bunches	130,470 crates	12 packed crates (in 8 hours)	10,873 (of 8 hrs.)	23	473
	Cauliflower: cutting	219,600 crate	48 crates (in 8 hrs.)	4,575 (of 8 hrs.)	23	199
	packing	219,600 crates	40 crates (in 8 hrs.)	5,490 (of 8 hrs.)	23	239
	Lettuce: thinning	4,070 acres	0.5 acre	8,140	23	354
	irrigating	2,713 acres	3 acres	905	23	39

Table 3 continued on next page.

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
February (cont'd)	Spinach: hoeing	567 acres	0.66 acre	860	23	38
	Apples: pruning	356 acres	0.2 acre	1,780	23	77
	spraying	535 acres †	1.5 acre	357	23	15
	Pears: pruning	96 acres †	0.17 acre	576	23	21
	spraying	241 acres †	1.5 acre	161	23	7
	Totals			42,218	23	1,836 man-months
March	Grain: pulling radish on one-sixth of barley acreage	6,666 acres	13 acres	513	23	23
	Garlic: hoeing first time	175 acres	0.5 acre	350	23	16
	second time	175 acres	1.5 acre	117	23	6
	Seed peas: hoeing	1,820 acres	1 acre	1,820	23	80
	Seed sweet peas: hoeing and weeding	125 acres	1 acre	125	23	6
	Sugar beets: thinning	5,000 acres	0.4 acre	12,500	23	544
	hoeing	1,900 acres	1 acre	1,900	23	83
	Carrots: weeding	304 acres	0.25 acre	1,216	23	53
	hoeing	130 acres	1 acre	130	23	6
	pulling and tying in bunches	21,745 crates	15 packed crates (in 9 hours)	1,450 (of 9 hrs.)	23	63
	irrigating	435 acres	3 acres (in 12 hours)	145 (of 12 hrs.)	23	6
	Cauliflower: cutting	137,400 crates	48 crates (in 8 hrs.)	2,863 (of 8 hrs.)	23	125
	packing	137,400 crates	40 crates (in 8 hours)	3,435 (of 8 hrs.)	23	150
	Lettuce: thinning	6,780 acres	0.5 acre	13,560	23	590
	hoeing	4,070 acres	1 acre	4,070	23	177
	irrigating	6,630 acres †	3 acres	2,210	23	96
	cutting	8,000 crates	30 packed crates	266	6	45 (from 23rd to 31st)
	Peas (green): hoeing	1,000 acres	1 acre	1,000	23	44
	Spinach: picking and putting in crates	2,268 tons	2 tons (in 6 hours)	1,134 (of 6 hrs.)	11	103 (from 15th to 31st)

Table 3 continued on next page.

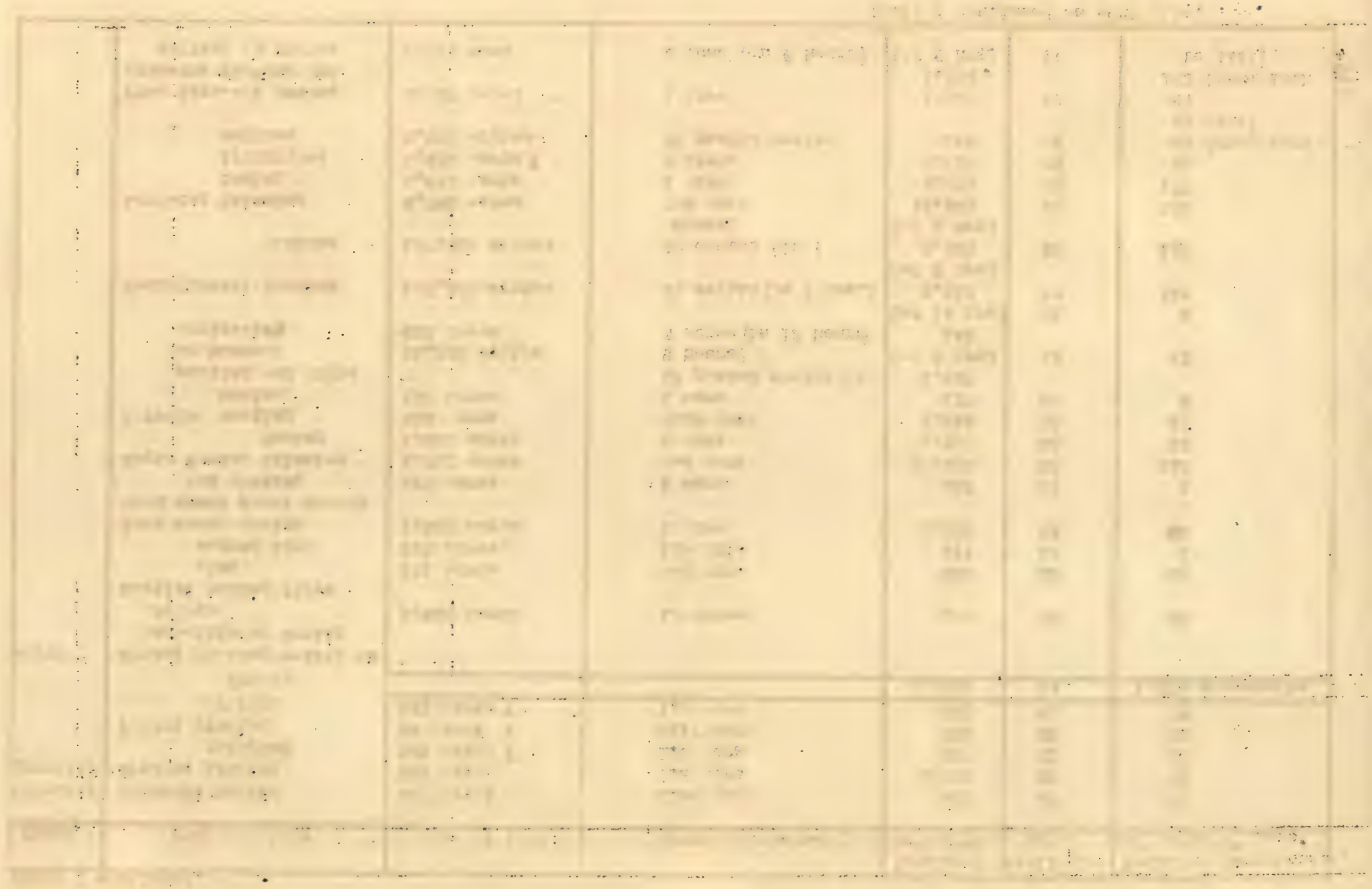

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
March (cont.)	Tomatoes: transplanting in beds	1,648,800 plants	5,000 plants	330	23	15
	Apples: pruning	356 acres	0.2 acre	1,780	23	77
	spraying	535 acres†	1.5 acres	357	23	15
	Pears: spraying	241 acres†	1.5 acres	161	23	7
	Totals			51,432	23	2,236 man-months
April	Grain: pulling radish on one-sixth of barley acreage	6,666 acres	13 acres	513	24	22
	Garlic: hoeing second time	350 acres	1.5 acres	234	24	10
	Potatoes (early): picking up and boxing	6,250 lugs	60 lugs (1,800 pounds)	105	12	9 (from 15th to 30th)
	Seed peas: hoeing	910 acres	1 acre	910	24	38
	Sugar beets: thinning	5,000 acres	0.4 acre	12,500	24	521
	hoeing	5,000 acres	1 acre	5,000	24	208
	irrigating	8,000 acres†	5 acres (in 12 hrs.)	1,600 (of 12 hrs.)	24	65
	Carrots: weeding	565 acres	0.25 acre	2,260	24	95
	hoeing	304 acres	1 acre	304	24	13
	pulling and tying in bunches	32,617 crates	15 packed crates	2,174	24	90
	irrigating	870 acres	3 acres (in 12 hrs.)	290 (of 12 hrs.)	24	13
	Cauliflower: cutting	25,200 crates	48 crates (in 8 hours)	525 (of 8 hrs.)	24	22
	packing	25,200 crates	40 crates (in 8 hours)	630 (of 8 hrs.)	24	27
	Lettuce: thinning	3,616 acres	0.5 acre	7,232	24	302
	hoeing	6,780 acres	1 acre	6,780	24	282
	irrigating	6,930 acres†	3 acres	2,310	24	96
	cutting	610,400 crates	30 packed crates	20,347	24	848
	Peas: hoeing	1,000 acres	1 acre	1,000	24	42
	picking	3,250 hampers	10 hampers	325	5	65 (for 5 days)
	Tomatoes: transplanting to field	687 acres	0.75 acre	916	12	77 (from 15th to 30th)

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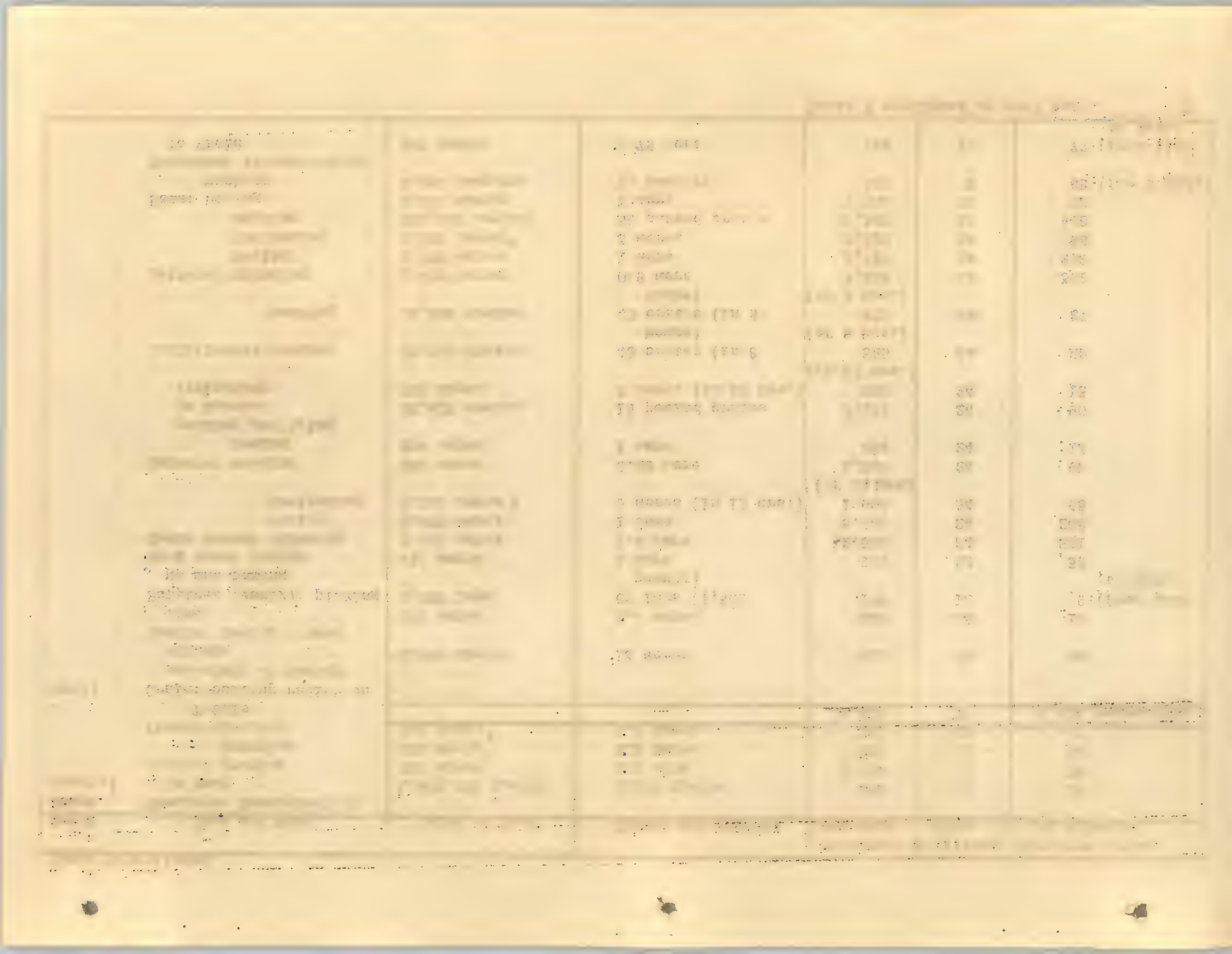

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
April (cont'd)	Apples: spraying	1,069 acres †	1.5 acre	713	24	30
	Apricots: thinning	208 acres ‡	0.25 acre	832	12	69 (from 15th to 30th)
	Pears: spraying	482 acres †	1.5 acre	321	24	13
	Totals			67,821	24	2,826 man-months
May	Beans (dry farmed): hoeing	16,000 acres †	¢	693	25	28
	Beans, irrigated: hoeing	28,700 acres	¶	7,390	25	296
	irrigating	9,567 acres †	‖	1,164 (of 12 hrs)	25	47
	Hay, other than alfalfa: mowing	6,000 acres †	10 acres	600	25	24
	raking	6,000 acres †	20 acres	300	25	12
	shocking	6,000 acres †	30 acres	200	25	8
	Onions: hoeing second time	250 acres	1.5 acre	167	25	7
	Potatoes (early): picking up and boxing	43,750 lugs	60 lugs (1,800 lbs.)	730	25	30
	Potatoes (late): hoeing	332 acres	3 acres	111	25	5
	Seed peas: piling, turning ends of windrows, etc.	2,271 acres †	3 acres	757	25	31
	Seed, nasturtium: hoeing	100 acres	0.6 acre	167	25	7
	Sugar beets: thinning	1,700 acres	0.4 acre	4,250	25	170
	hoeing	5,000 acres	1 acre	5,000	25	200
	irrigating	8,000 acres †	5 acres (in 12 hrs.)	1,600 (of 12 hrs.)	25	64
	Carrots: weeding	435 acres	0.25 acre	1,740	25	70
	hoeing	565 acres	1 acre	565	25	23
	irrigating	1,000 acres	3 acres (in 12 hrs.)	334 (of 12 hrs.)	25	14
	pulling and tying in bunches	76,107 crates	15 packed crates	5,074	25	203
	Cauliflower: cutting	7,200 crates	48 crates (in 8 hrs.)	150 (of 8 hrs.)	12	13 (for 2 weeks)
	packing	7,200 crates	40 crates (in 8 hrs.)	180 (of 8 hrs.)	12	15 (for 2 weeks)

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Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
May (cont'd)	Lettuce: thinning	4,972 acres	0.5 acre	9,944	25	398
	hoeing	3,616 acres	1 acre	3,616	25	145
	irrigating	5,726 acres †	3 acres	1,910	25	76
	cutting	1,017,330 crates	30 packed crates	33,911	25	1,356
	Peas (green): hoeing	1,000 acres	1 acre	1,000	25	40
	picking	195,000 hampers	10 hampers	19,500	25	780
	Peas (canning): harvesting with viner	366 acres †	0.5 acre	732	15	49 (from 15th to 31st)
	Tomatoes: transplanting to field	687 acres	0.75 acre	916	25	37
	replanting	1,030 acres	3.3 man-hours per acre	344	25	14
	hoeing	458 acres	3.0 acres	153	25	7
	Apples: thinning	535 acres	0.17 acre	3,210	10	321 (from 20th to 31st)
	spraying	713 acres †	1.5 acres	475	25	19
	Apricots: thinning	208 acres ‡	0.25 acre	832	12	69 (from 1st to 15th)
	Pears: spraying	321 acres †	1.5 acre	214	25	9
	Strawberries: picking (on 2 year old plantings)	39,375 crates †	20 crates (of 12 baskets)	1,969	25	79**
	Totals			109,898	25	4,396 man-months
June	Hay, other than alfalfa: mowing	1,500 acres †	10 acres	150	6	25 (from 1st to 7th)
	raking	1,500 acres †	20 acres	75	6	13 (from 1st to 7th)
	shocking	1,500 acres †	30 acres	50	6	9 (from 1st to 7th)
	baling	3,750 tons	5 tons per day of 13 hours	750 (of 13 hrs)	26	29
	Grain: harvesting	4,467 acres †	1.2 man-hours per acre	670 (of 8 hrs.)	18	38 (from 7th to 30th)
	Beans: dry farmed, hoeing	16,000 acres †	§	693	26	27
	Beans: irrigated, hoeing	28,700 acres	¶	7,390	26	285

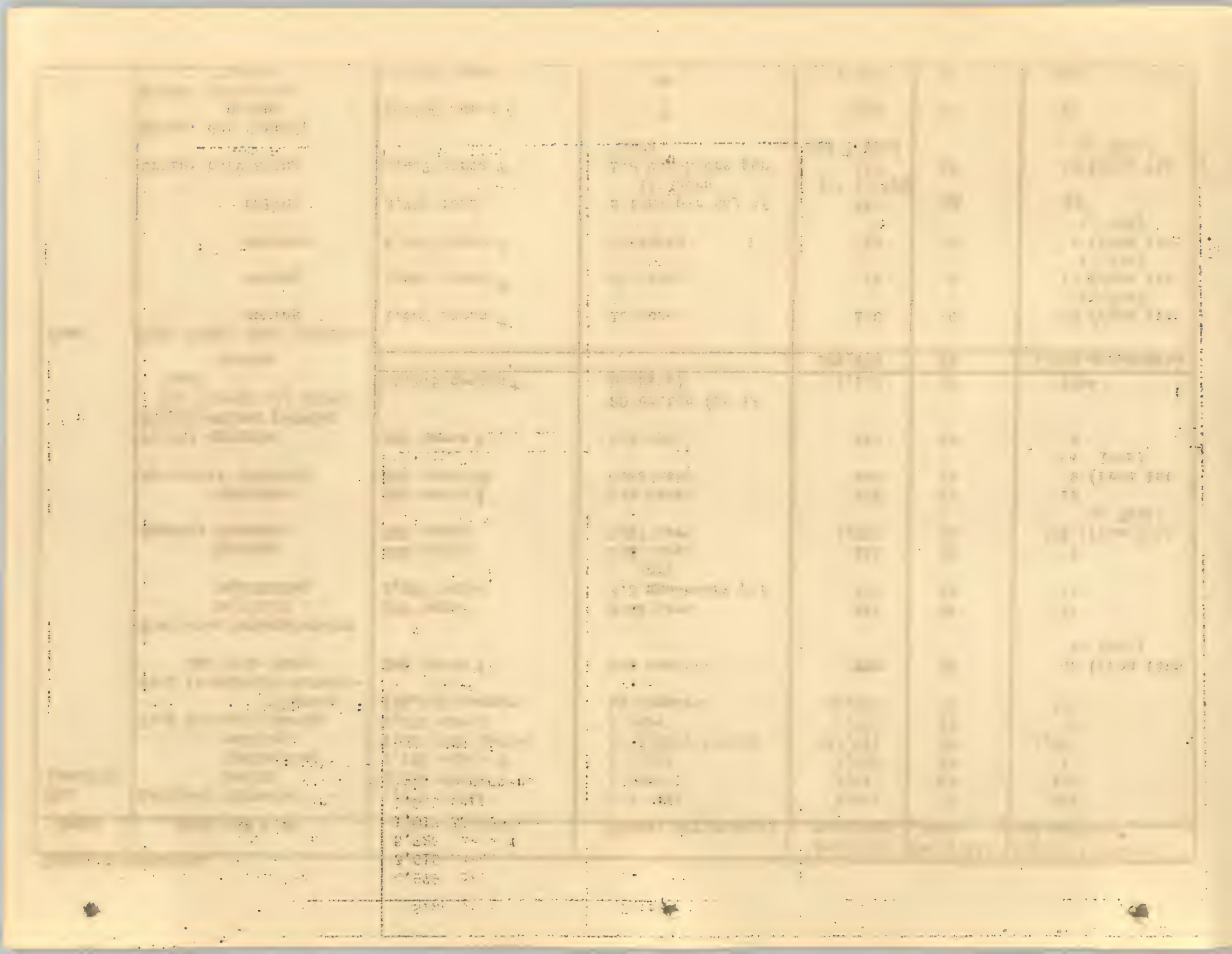

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
June (cont'd)	Beans, irrigated: irrigating	9,567 acres †	"	1,746 (of 12 hrs.)	26	68
	Potatoes (early): picking up and putting in boxes	12,500 lugs	60 lugs (1,800 lbs.)	209	13	16 (from 1st to 15th)
	Potatoes (late): hoeing	332 acres	3 acres	111	26	5
	Seed peas: threshing	1,514 acres †	1.25 man-hours per acre	237 (of 8 hrs)	26	10
	Seed, nasturtium: hoeing	100 acres	0.6 acre	167	26	6
	Sugar beets: thinning	400 acres	0.4 acre	1,000	26	39
	irrigating	8,000 acres †	5 acres (in 12 hours)	1,600 (of 12 hrs.)	26	62
	hoeing	1,700 acres	1 acre	1,700	26	65
	Carrots: weeding	305 acres	0.25 acre	1,220	26	47
	hoeing	435 acres	1 acre	435	26	17
	irrigating	740 acres	3 acres (in 12 hours)	247 (of 12 hrs.)	26	10
	pulling and tying in bunches	141,342 crates	15 packed crates	9,423	26	362
	Lettuce: thinning	6,328 acres	0.5 acre	12,656	26	487
	hoeing	4,972 acres	1 acre	4,972	26	191
	irrigating	7,535 acres †	3 acres	2,512	26	97
	cutting	542,580 crates	30 packed crates	18,086	26	696
	Peas (green): picking	55,250 hampers	10 hampers	5,525	26	213
	Peas (canning): harvesting with viner	122 acres †	0.5 acre	244	6	41 (from 1st to 7th)
	Tomatoes: replanting	344 acres	3.3 man-hrs. per acre	115	26	5
	hoeing	458 acres	3.0 acres	153	26	6
	Apples: thinning	1,069 acres	0.17 acre	7,483	26	280
	spraying	713 acres †	1.5 acre	475	26	19
	Apricots: picking	417 tons	1,000 lbs.	834	13	64 (from 15th to 30th)
	cutting for drying	375 tons	600 lbs.	1,250	13	96 (from 15th to 30th)
	Other dry yard work	375 tons	11 hrs. per fresh ton	413	13	32
	Pears: spraying	321 acres †	1.5 acre	214	26	8

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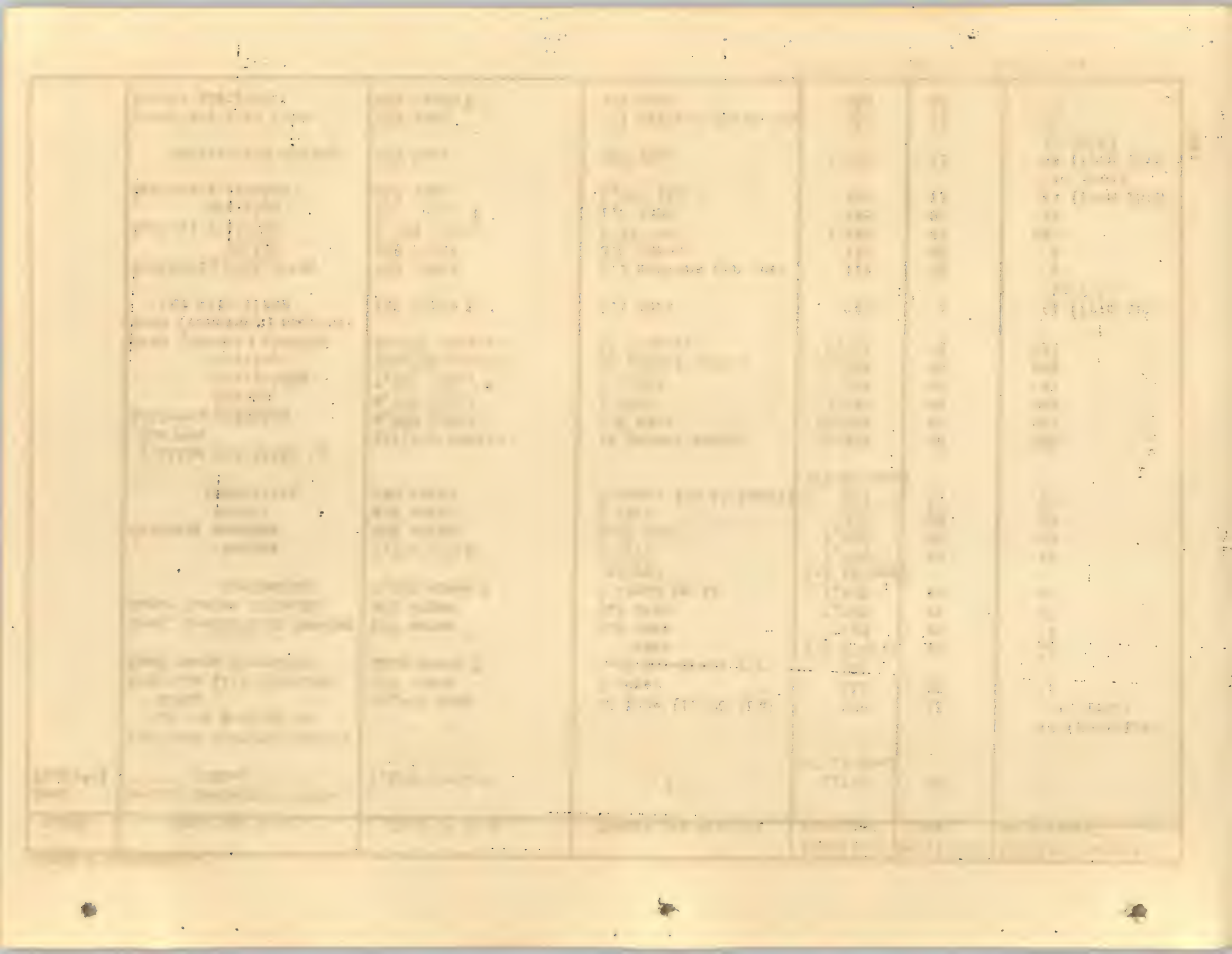

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
June (cont'd)	Strawberries: picking (on 2 year old plantings)	26,250 crates†	20 crates (of 12 baskets)	1,313	26	51**
	Totals			84,118	26	3,235 man-months
July	Beans: dry farmed, hoeing	16,000 acres †	ϕ	693	26	27
	Beans, irrigated: hoeing	28,700 acres	¶	7,390	26	285
	irrigating	9,567 acres †	"	1,746 (of 12 hours)	26	68
	Grain: harvesting	15,633 acres †	1.2 man-hrs. per acre	2,345 (of 8 hrs)	26	91
	Hay, other than alfalfa: baling	3,750 tons	5 tons (in 13 hrs.)	750 (of 13 hrs)	26	29
	Potatoes (late): hoeing	332 acres	3 acres	111	26	5
	Seed sweet peas: cutting and piling (by hand)	250 acres	7 man-days of 5 hours per acre	1,750 (5-hr. day)	26	68
	threshing	250 acres	7.2 man-hours per acre	360 (of 5 hrs.)	26	14
	Sugar beets: topping and loading	10,133 tons	6 tons	1,689	6	280 (from 23rd to 31st)
	hoeing	400 acres	1 acre	400	12	33 (from 1st to 15th)
	Carrots: weeding	260 acres	0.25 acre	1,040	26	40
	hoeing	305 acres	1 acre	305	26	12
	irrigating	566 acres	3 acres (in 12 hrs.)	189 (of 12 hrs.)	26	8
	pulling and tying in bunches	108,725 crates	15 packed crates	7,248	26	278
	Cauliflower: planting	800 acres	0.5 acre	1,600	26	62
	irrigating	600 acres †	2.5 acres	240	26	9
	Lettuce: thinning	5,424 acres	0.5 acre	10,848	26	417
	hoeing	6,328 acres	1 acre	6,328	26	243
	irrigating	7,830 acres †	3 acres	2,610	26	101

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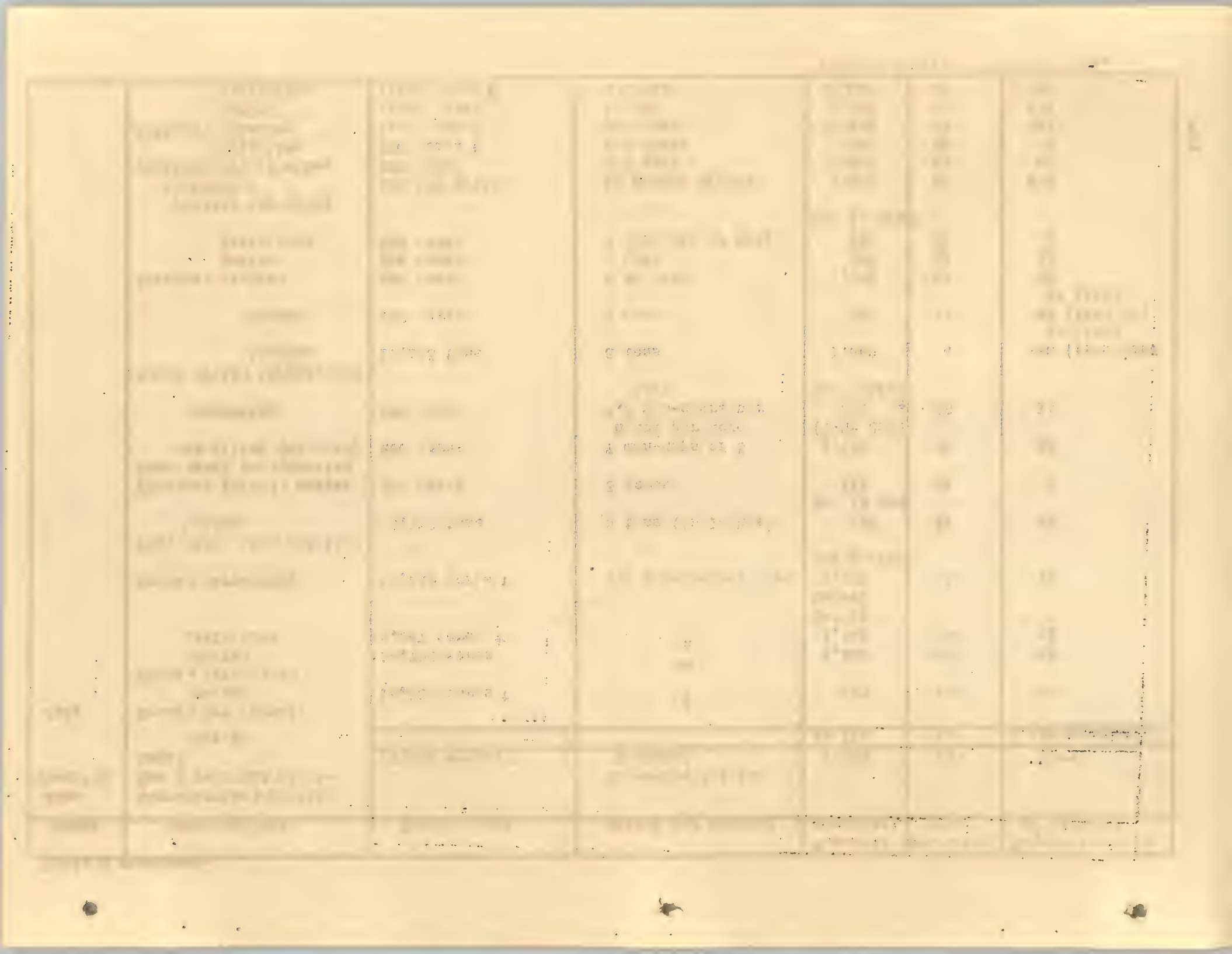

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
July (cont'd)	Lettuce: cutting	746,050 crates	30 packed crates	24,868	26	956
	Tomatoes: hoeing	458 acres	3.0 acres	153	26	6
	Apples: spraying	713 acres †	1.5 acres	475	26	19
	Apricots: picking	3,332 tons	1,000 lbs.	6,664	26	256
	cutting for drying	2,999 tons	600 lbs	9,997	26	385
	other dry yard work	2,999 tons	11 hrs. per fresh ton	3,299	26	127
	Pears: spraying	321 acres	1.5 acre	214	26	8
	Strawberries: picking (on 2 year old plantings)	13,125 crates †	20 crates (of 12 baskets)	656	26	26 **
	Totals			93,968	26	3,514 man-months
August	Beans: dry farmed, turning ends of windrows, etc.	3,333 acres †	16 acres (in 8 hrs)	209 (of 8 hrs)	26	8
	threshing	1,250 acres †	0.5 hrs per acre	78 (of 8 hrs)	10	8 (from 20th to 31st)
	Beans, irrigated: hoeing	28,700 acres	"	7,390	26	285
	irrigating	9,567 acres †	"	1,164 (of 12 hrs)	26	45
	raking	2,153 acres †	10 acres (in 8 hrs)	216 (of 8 hrs)	13	17 (from 15th to 31st)
	picking up vines, etc.	3,590 acres †	5 acres (in 8 hrs)	718 (of 8 hrs)	13	56 (from 15th to 31st)
	Grain: harvesting	2,234 acres †	1.2 man-hrs per acre	335 (of 8 hrs)	8	42 (from 1st to 10th)
	Hay, (other than alfalfa): baling	3,750 tons	5 tons (in 13 hrs)	750 (of 13 hrs)	26	29
	Garlic: pulling and throwing in piles clipping roots and tops, and sacking	525 acres	1 acre	525	26	21
		34,125 sacks	10 sacks	3,413	26	132
	Seed, radish: hand cutting and piling	150 acres	1.75 acres (in 6 hours)	86 (of 6 hrs)	26	4
	Seed, nasturtium: cutting, threshing, and screening	33 acres	15 man-days per acre	495 (of 5 hrs)	13	38 (from 15th to 31st)

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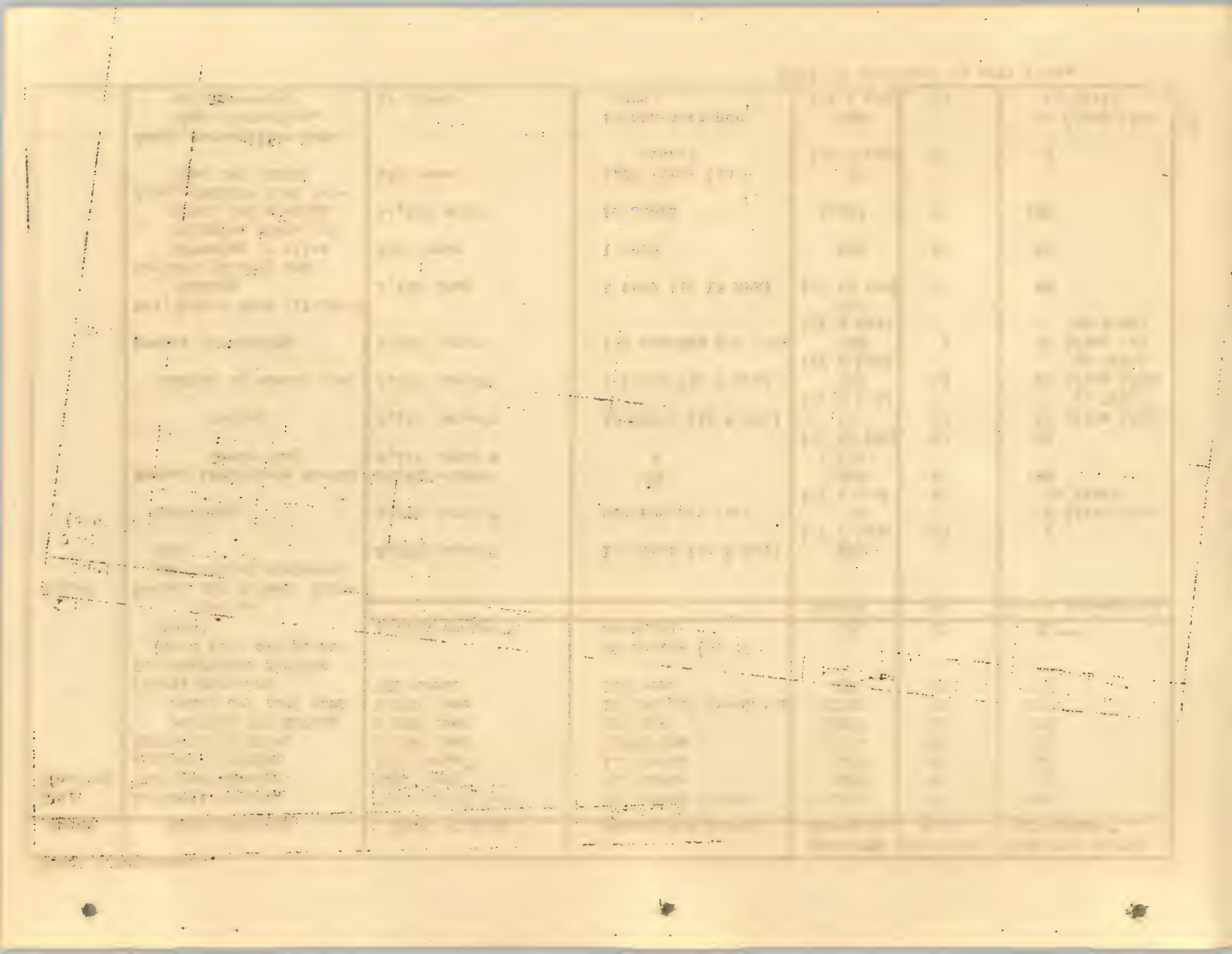

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
August (cont'd)	Sugar beets: topping and loading	50,666 tons	6 tons	8,445	26	325
	Carrots: weeding	350 acres	0.25 acre	1,400	26	54
	hoeing	260 acres	1 acre	260	26	10
	irrigating	609 acres	3 acres (in 12 hrs.)	203 (of 12 hrs)	26	8
	pulling and tying in bunches	76,107 crates	15 packed crates	5,074	26	195
	Cauliflower: planting	800 acres	0.5 acre	1,600	26	62
	irrigating	1,200 acres †	2.5 acres	480	26	19
	Lettuce: thinning	5,878 acres	0.5 acre	11,756	26	452
	hoeing	5,424 acres	1 acre	5,424	26	209
	irrigating	7,536 acres †	3 acres	2,512	26	97
	cutting	949,515 crates	30 packed crates	31,650	26	1,217
	Tomatoes: picking for cannery	270 tons	2,500 lbs.	216	9	24 (from 20th to 31st)
	Almonds: knocking	63 tons	150 lbs.	840	13	65 (from 15th to 31st)
	Apples: picking	120,000 boxes	60 boxes	2,000	13	154 (from 15th to 31st)
	Apricots: picking	417 tons	1,000 lbs.	834	6	139 (from 1st to 7th)
	cutting for drying	375 tons	1,000 lbs.	1,250	6	208 (from 1st to 7th)
	other dry yard work	375 tons	11 hrs. per fresh ton	413	12	34 (from 1st to 15th)
	Pears: picking a few Bartletts only (inconsequential)					
	Strawberries: picking, (on 2 year old plantings)	6,563 crates †	20 crates (of 12 baskets)	329	26	13**
	Totals			90,065	26	3,464 man-months

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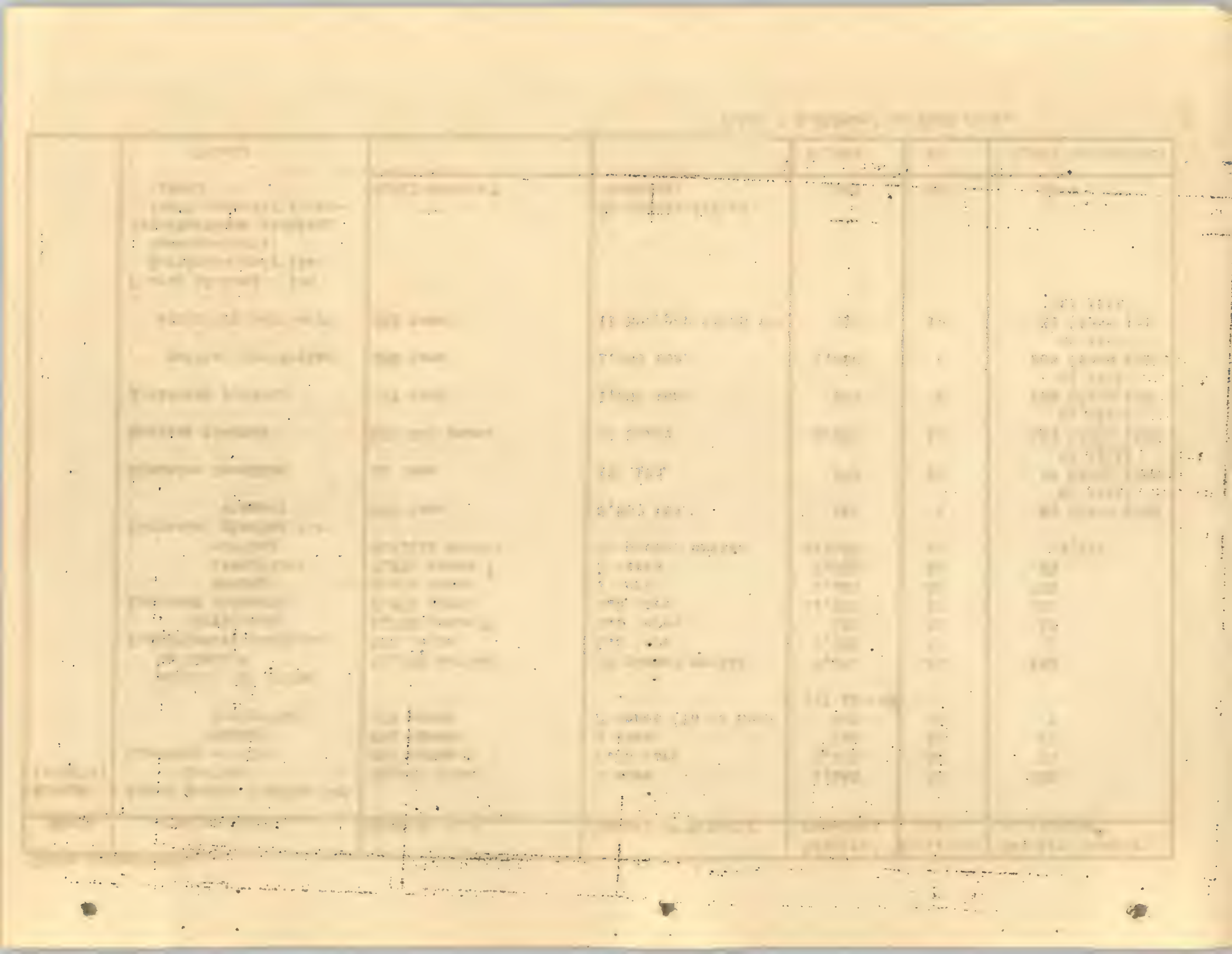

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
September	Beans: dry farmed, turning ends of windrows, etc.	3,333 acres †	16 acres (in 8 hours)	209 (of 8 hrs.)	26	8
	threshing	3,750 acres †	0.5 man-hours per acre	235 (of 8 hrs.)	26	9
	Beans, irrigated: raking	6,460 acres †	10 acres (in 8 hours)	646 (of 8 hrs.)	26	25
	picking up vines, etc.	10,760 acres †	5 acres (in 8 hours)	2,152 (of 8 hrs.)	26	83
	threshing with pick-up harvester	5,700 acres †	1.5 man-hour per acre	1,069 (of 8 hrs.)	26	42
	Onions: pulling and throwing 3 beds to 1	250 acres	1 acre	250	18	14 (from 1st to 20th)
	clipping tops) sorting and sacking)	25,000 cwt.	12 cwt.	2,084	26	81
	Potatoes (late): picking up and sacking (or piling)	12,500 cwt.	50 cwt.	250	26	10
	Seed, nasturtium; cutting, threshing and screening	67 acres	15 man-days per acre	1,005 (of 5 hrs.)	26	39
	Seed, radish: threshing	150 acres	††	45 †	15	3 (for 15 days)
	Sugar beets: topping and loading	54,302 tons	6 tons	9,050	26	348
	Carrots: weeding	522 acres	0.25 acre	2,088	26	80
	hoeing	350 acres	1 acre	350	26	14
	irrigating	870 acres	3 acres (in 12 hours)	290 (of 12 hrs.)	26	12
	Pulling and tying in bunches	65,235 crates	15 packed crates	4,349	26	167
	Cauliflower: planting	800 acres	0.5 acre	1,600	26	62
	hoeing	600 acres †	7 man-hours per acre	420	26	17
	irrigating	1,200 acres †	2.5 acres	480	26	19
	Lettuce: thinning	6,330 acres	0.5 acre	12,660	26	487
	hoeing	5,878 acres	1 acre	5,878	26	226

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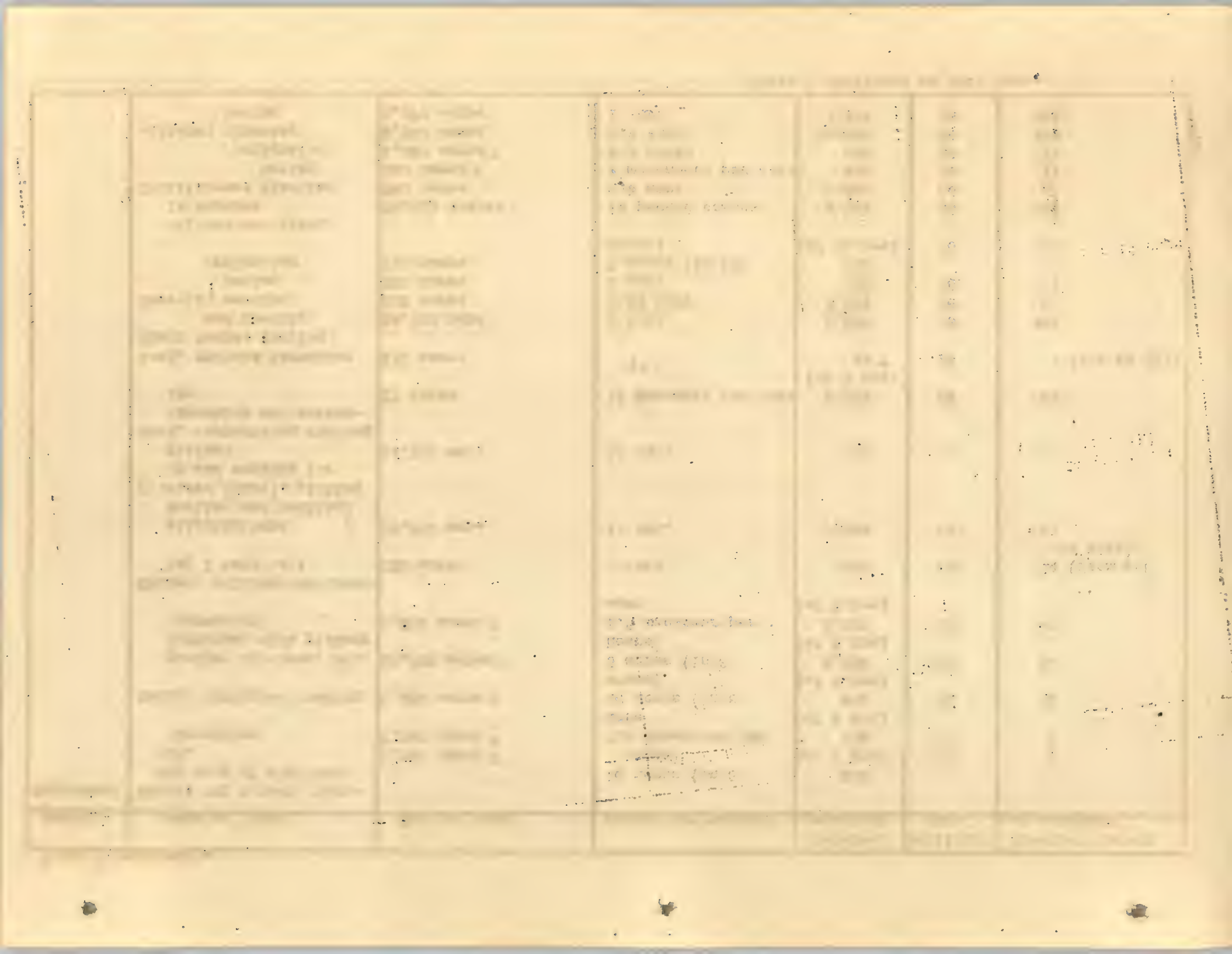

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
September (cont'd)	Lettuce: irrigating	8,139 acres †	3 acres	2,713	26	105
	cutting	813,870 packed crates	30 packed crates	27,129	26	1,005
	Peas: turning rows	2,100 acres	3 acres	700	26	27
	hoeing	2,100 acres	4 man-hrs. per acre	840	26	33
	picking	9,750 hampers	10 hampers	975	15	65 (for 15 days)
	Tomatoes: (picking for shipping	3,675 packed lugs	25 packed lugs	147	6	25 (for 6 days)
	picking for cannery	1,078 tons	2,500 lbs.	863	26	34
	Almonds: knocking	127 tons	150 lbs.	1,693	26	65
	Apples: picking	320,000 boxes	60 boxes	5,333	26	205
	Pears: picking (other than Bartlett)	1,627 tons †	1 ton	1,627	26	63
	Totals			88,708	26	3,412 man-months
October	Beans, irrigated: threshing with "pick-up" harvester	1,425 acres †	1.5 man-hour per acre	268 (of 8 hrs.)	25	11
	Potatoes (late): picking up and sacking or piling	12,500 cwt.	50 cwt.	250	25	10
	Sugar beets: topping and loading	63,333 tons	6 tons	10,555	25	422
	Carrots: weeding	435 acres	0.25 acre	1,740	25	70
	hoeing	522 acres	1.0 acre	522	25	21
	pulling and tying in bunches	86,980 crates	12 packed crates	7,250	25	290
	irrigating	957 acres	3 acres (in 12 hours)	319 (of 12 hrs)	25	13
	Cauliflower: hoeing	600 acres †	7 man-hours per acre	420	25	17
	irrigating	1,200 acres †	2.5 acres	480	25	19
	Lettuce: thinning	904 acres	0.5 acre	1,808	25	73
	hoeing	6,330 acres	1.0 acre	6,330	25	254
	irrigating	7,838 acres †	3.0 acres	2,613	25	105
	cutting	881,692 packed crates	30 packed crates	29,390	25	1,176
	Peas: picking	52,000 hampers	10 hampers	5,200	25	208
	Tomatoes: picking for shipping	107,800 packed lugs	25 packed lugs	4,312	25	173
	picking for cannery	1,348 tons	2,500 lbs.	1,079	25	44
	Almonds: knocking	95 tons	150 lbs.	1,267	25	51

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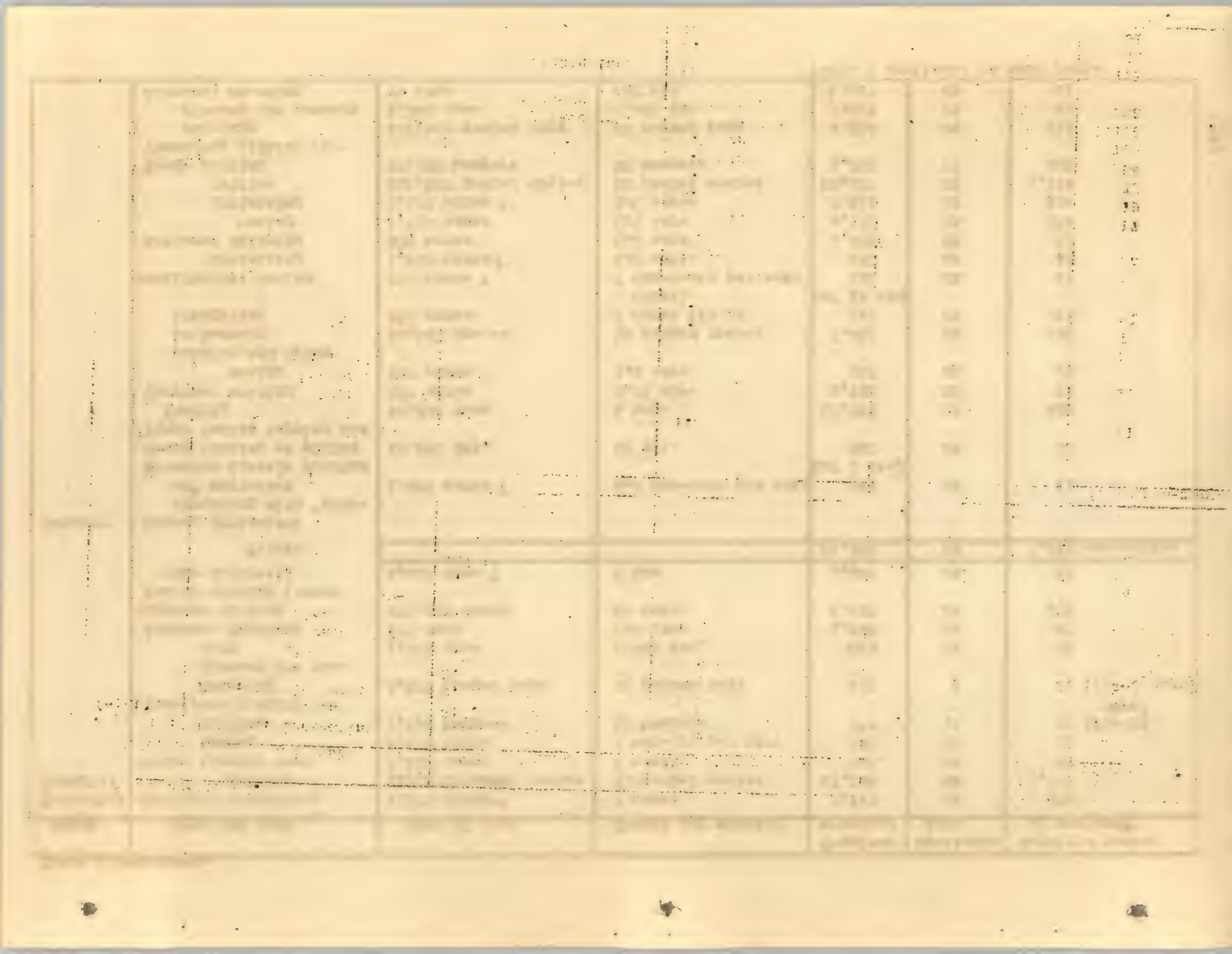


Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
October (cont'd)	Apples : picking	320,000 boxes	60 boxes	5,333	25	213
	Apricots : pruning	167 acres †	0.25 acre	668	12	56 (from 15th to 31st)
	Pears : picking (other than Bartlett)	542 tons †	1 ton	542	13	42 (from 1st to 15th)
	Walnuts: knocking, hulling, and sacking	165 tons	200 lbs.	1,650	25	66
	Totals			81,996	25	3,280 man-months
November	Garlic : planting	53 acres	0.16 acre	318	24	14
	Potatoes (late) : picking up and sacking or piling	12,500 cwt.	50 cwt.	250	24	11
	Carrots : weeding	435 acres	0.25 acre	1,740	24	72
	hoeing	435 acres	1 acre	435	24	18
	pulling and tying in bunches	130,470 crates	12 packed crates	10,872	24	453
	irrigating	957 acres	3 acres (in 12 hrs.)	319 (of 12 hrs.)	24	14
	Cauliflower : hoeing	600 acres †	7 man-hours per acre	467	24	20
	cutting	2,400 crates	48 crates (in 8 hours)	50 (of 8 hrs.)	5	10 (for 5 days)
	packing	2,400 crates	40 crates (in 8 hours)	60 (of 8 hrs.)	5	12 (for 5 days)
	irrigating	1,200 acres †	2.5 acres	480	24	20
	Lettuce : hoeing	904 acres	1 acre	904	24	38
	irrigating	603 acres	3 acres	201	24	9
	cutting	949,515 packed crates	30 packed crates	31,651	24	1,319
	Peas : picking	9,750 hampers	10 hampers	975	15	65 (for 15 days)
	Tomatoes : picking for shipping	11,025 packed lugs	25 packed lugs	441	24	19
	Almonds : knocking	32 tons	150 lbs	427	8	53 (from 1st to 10th)
	Apples : picking	40,000 boxes	60 boxes	667	6	111 (from 1st to 7th)
	Apricots : pruning	333 acres †	0.25 acre	1,332	24	56
	Pears : pruning	96 acres †	0.17 acre	576	24	24
	Totals			52,165	24	2,174 man-months

Table 3 continued on next page.

Table 3 continued.

Month	Crop and task	Size of task	Output per man-day	Required man-days	Available days	Required number of workers*
December	Garlic: planting	420 acres	0.16 acre	2,520	20	126
	Carrots: weeding	522 acres	0.25 acre	2,088	20	105
	hoeing	435 acres	1 acre	435	20	22
	pulling and tying in bunches	108,725 crates	12 packed crates	9,060	20	453
	Cauliflower: cutting	43,200 crates	48 crates (in 8 hours)	900 (of 8 hrs.)	20	45
	hoeing	600 acres †	7 man-hours per acre	467	20	24
	packing	43,200 crates	40 crates (in 8 hrs.)	1,080 (of 8 hrs.)	20	54
	Lettuce: cutting	135,645 packed crates	30 packed crates	4,522	20	227
	Apples: pruning	713 acres	0.2 acre	3,565	20	178
	Apricots: pruning	333 acres †	0.25 acre	1,332	20	67
	Pears: pruning	145 acres †	0.17 acre	870	20	43
	Totals			26,839	20	1,344 man-months

* Monthly basis unless otherwise noted.

† Estimated portion of job done by seasonal workers.

‡ Apricot thinning in 1935 estimated to have been about 25 per cent of normal amount.

§ Hoeing on dry farmed beans figured at 2.3 man-hours per acre for the season, equally spread over May, June, and July.

¶ Hoeing on irrigated beans (including seed bean acreage) figured at 10.3 man-hours per acre for the season, equally spread over May, June, July, and August.

‖ Labor in irrigating beans figured at 7.3 man-hours per acre for the season.

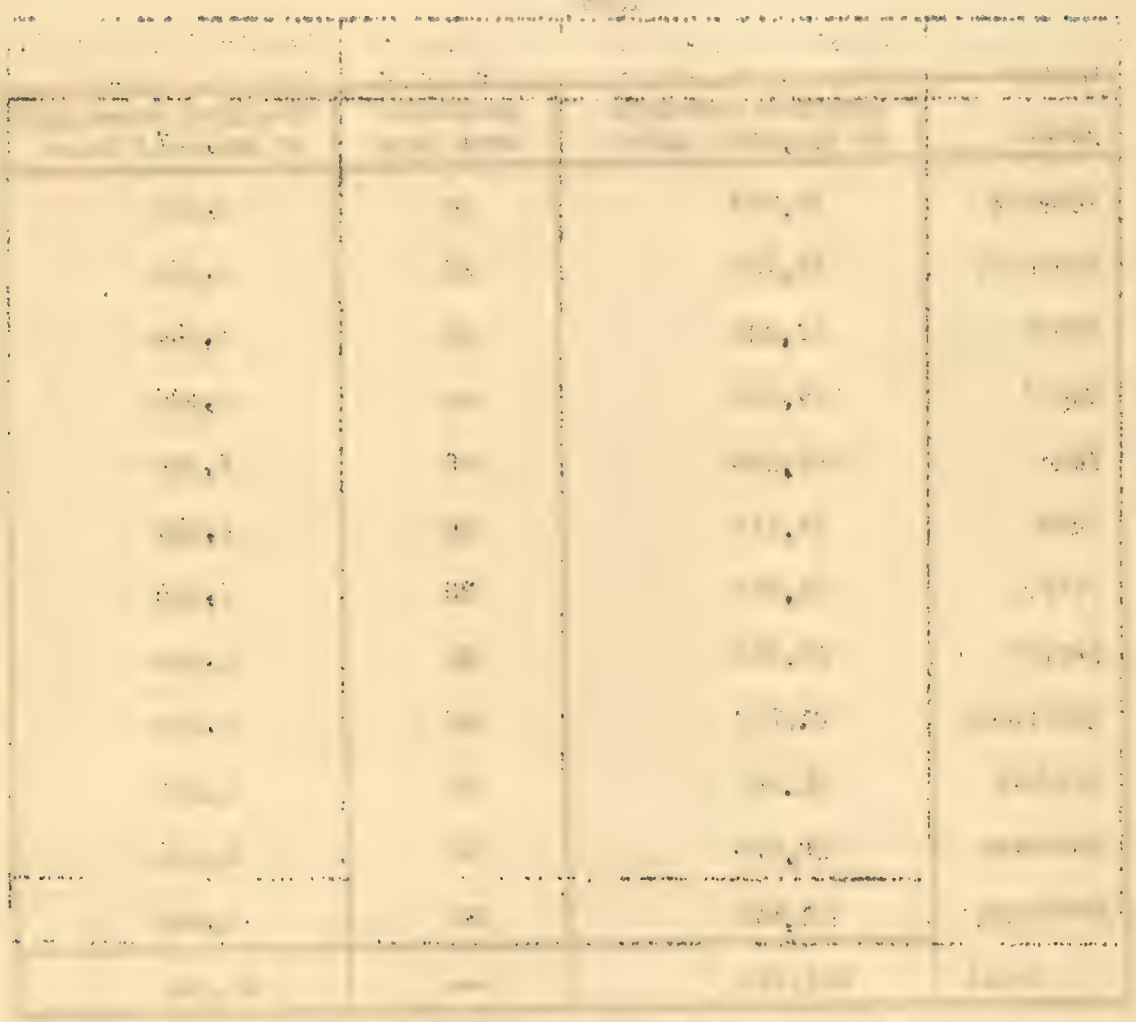
** Seasonal workers for strawberry picking are usually needed only on 2 year old plantings. On these, one extra person is needed for each acre in May and June, and for each two acres in July and August.

†† Seasonal labor on radish seed threshing amounts to about 3 man-hours per acre.

TABLE 4

Summary of Seasonal Labor Needs by Months
Monterey County
1935

Month	Required man-days of seasonal labor	Available work days	Required man-months of seasonal labor
January	22,747	19	1,197
February	42,218	23	1,836
March	51,432	23	2,236
April	67,821	24	2,826
May	109,898	25	4,396
June	84,118	26	3,235
July	93,968	26	3,614
August	90,065	26	3,464
September	88,708	26	3,412
October	81,996	25	3,280
November	52,165	24	2,174
December	26,839	20	1,344
Total	811,975	--	33,014



Notes

Notes on Table 2.-- Data concerning "time of need," as shown in this table break down required seasonal labor into the period in which the work is performed, in order to permit a subsequent determination of labor needs by months (table 3). Some operations are performed only to a limited extent with seasonal labor. For instance, only about half the hoeing of cauliflower is done by seasonal workers, as is the case also with the pruning of apricots and pears. Since each of these jobs is done in several different months, the proportionate amount for each month is shown.

The amount of work done each month is based on the cropping program followed during 1935. The allotting of amounts of work is based on findings concerning local farming practices and required time to "make" a crop, resulting from inquiry of producers and records of carlot shipments, the latter proving helpful in fixing dates of planting and of subsequent tasks involved in producing a given crop. Proportionate amounts of output harvested each month were determined from data of local practices with respect to harvesting, and from carlot shipments of perishable products. Records of truck shipments were also used when available.

Notes on Table 3.-- Table 3 is the condensed summary of labor needs as worked out for Monterey County as a result of findings pertinent to 1935. The data are presented by months with the tasks which were performed in each month indicated by both crop and task. The size of the job was calculated from the data appearing in table 1 (acreage and production) and table 2 (task, time of performance, and percentage of work pertinent to a given month). The output per man-day was calculated as indicated in the foreword presenting table 3. The number of required man-days is a result of dividing the size of task by output per man-day. The available days for the different tasks involve two variables. The first is the number of days when field work is possible because of favorable weather conditions. The basis for this column was determined from a study of the monthly weather charts of the United States Weather Bureau for the years 1933, 1934, and 1935. These data indicated available days per month as follows (based on a 26-day working month without allowance for holidays):

Month	Available days*	Length of work day	Month	Available days*	Length of work day
January	19	9	July	26	10
February	23	9	August	26	10
March	23	10	September	26	10
April	24	10	October	25	10
May	25	10	November	24	9
June	26	10	December	20	9

* Based on precipitation records of the Salinas station of the United States Weather Bureau for the years 1933, 1934, and 1935.

The second factor influencing the number of available days was the size of the job. If the output was only a few cars, then the number of days was limited to the time needed to get out these cars efficiently. If a field operation had to be performed in a period less than the number of available days in the month, then the specific number of days was noted. These restrictions are shown in parentheses. For example, the cutting of lettuce in March was limited to the last week in the month; picking of peas to 5 days in April, etc.

The totals of table 3 show the total required man-days of needed seasonal labor, the available days for field work during the month, and the necessary

number of men (as defined in the opening paragraph of table 3) required on a monthly basis to care for the tasks ordinarily performed by seasonal workers.

In an area such as Monterey County, involving a substantial acreage of truck crops, the findings as set forth in this report are bound to fluctuate materially from year to year, because of the market outlook upon what and how much acreage is planted, and when it is planted; because of variable seasonal conditions affecting yields, times of performing operations, and available days; and because of harvesting operations on certain crops being speeded up to supply a good market, or retarded to avoid a poor one, resulting in marked variations in the need for harvest labor.